

NORTHWESTERN ENERGY – SOUTH DAKOTA
Ten-year Plan
September 25, 2002

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**SOUTH DAKOTA PUBLIC
UTILITIES COMMISSION**

Northwestern Energy, a Division of NorthWestern Corporation ("Northwestern") submits this "Ten-year Plan" pursuant to SDLC 49-41B. The plan follows the general format prescribed in ARSD 20:10:21.

20:10:21:04 Existing Energy Conversion Facilities

BIG STONE PLANT

The Big Stone Plant is located near Big Stone City, Grant County, South Dakota. The Plant is a joint venture owned by Northwestern Energy, Otter Tail Power Company and Montana-Dakota Utilities Co. Northwestern's ownership and share of the output of the plant is 23.4% or 104,150 KW (MAPP accreditation). Otter Tail Power Company is, by contract, Operating agent for the three partners. The information requested in ARSD 20:10:21:04 is provided in Otter Tails' Ten-year Plan.

NEAL #4

The Neal #4 Plant is located near Sioux City, Woodbury County, Iowa. This plant is a joint venture owned by fourteen power suppliers. Iowa Public Service Company is the principal owner and operating agent for the plant. NorthWestern's share of ownership and capacity entitlement is 8.681% (approximately 52,000 kilowatts). NorthWestern's portion of the plant is now accredited in MAPP at about 54 MW.

1. Location: Near Port Neal in Woodbury County, Iowa approximately 10 miles south of Sioux City, Iowa.
2. Type: Coal-fired, steam-driven turbine - generator.
3. Net Capacity: (Total Plant) 600,000 KW.
4. Water Source: Missouri River

Annual Use: 265,440 acre-feet
Annual Consumption: 299 acre-feet

5. Fuel Type and Source: Sub-Bituminous Coal from Kennecott Cab Rojo, Belle Ayr and Caballo in Wyoming.

Annual Fuel Consumption:

2,271,027 tons in 1992
2,581,186 tons in 1993
2,661,027 tons in 1994
2,648,729 tons in 1995
2,539,620 tons in 1996
2,675,501 tons in 1997
2,434,376 tons in 1998
2,680,106 tons in 1999
3,134,708 tons in 2000
3,156,042 tons in 2001

6. Projected Date of removal from Service and Reason Therefore: The life expectancy of the plant is more than 30 years, which puts the projected removal from service date well beyond the range of this Ten-year-plan.

Coyote No. 1

NorthWestern Energy is one of four power suppliers participating in the Coyote electric generating plant in the vicinity of the lignite mines near Beulah, North Dakota. With a 10% share in the ownership of the plant, NorthWestern is entitled to 10% of the plant's net capacity, or 42,700 KW (MAPP accreditation). Otter Tail Power Company has a 35% share in the ownership of the plant and is, by contract, the operating agent for the owners. The information requested in ARSD 20:10:21:04 is provided in Otter Tail's Ten-year Plan.

20:10:21:05 Proposed Energy Conversion Facilities

NorthWestern proposes three simple cycle 25 MW combustion turbine additions at unidentified sites within our service territory during the last seven years of the period covered by this Plan. These requirements were identified in March, 1995 Integrated Resource Plan which has been supplied to the commission.

2005 & 2009 Combustion Turbines

1. General anticipated location and reasons for such selection: The most likely locations will be inside our service territory connected to either the 34.5 or 69 kV voltage system. The sites will be chosen to maximize the cost-effective reliability of the system.
2. Probable type and nameplate capacity: Simple Cycle combustion Turbine, 35 MW nameplate capacity.
3. Projected annual production in megawatt-hours: Annual system generation is expected to be 13,000 MWH.
4. Proposed water source and point of withdrawal, estimated maximum and rate of withdrawal, estimated maximum and annual use and consumption in acre feet: Water used for NOx control injection: City water supply preferred point of withdrawal undetermined, estimated maximum 7 acre-feet/year, annual use (normal) 3 acre feet/year, 0.2 acre-feet/day average rate of withdrawal (when running) 0.1 acre-feet/day, estimated maximum annual use and consumption 7 acre-feet/year.
5. Proposed fuel type and source, estimated maximum and annual consumption of fuel, and if known, proposed means for transporting fuel to the facility: Natural gas or Fuel Oil, maximum fuel consumption (13,000 MWH) 182,000 MMBtu Natural gas, Pipeline.
6. Proposed plans for waste disposal and monitoring of emissions and wastes, as known: Waste water to evaporation pond. Automated fuel flow data loggers will be required.
7. Description of anticipated associated facilities: Not yet identified.
8. Projected operating life from fuel source in this state: N/A.
9. Projected date of removal from service: Beyond the scope of the report.
10. Total estimated Capital: \$11,400,000 in 2001, \$17,500,000 in 2005 and \$20,000,000 in 2009.

20:10:21:06 Existing Transmission FacilitiesType 115 KV - AC

- a. Ellendale Substation about one mile west of Ellendale, North Dakota to "A" tap about two miles west of Aberdeen, South Dakota - 37.9 miles total. Approximately 33 miles of this line are in the State of South Dakota.
- b. "A" tap about two miles west of Aberdeen to the Seibrecht Substation about one mile south of Aberdeen - 7.5 miles.
- c. "A" tap about two miles west of Aberdeen to the Aberdeen City Substation in Aberdeen, South Dakota - 3.2 miles.
- d. Seibrecht Substation to the Western Area Power Administration's Groton Substation located south of Groton, South Dakota - 25.9 miles.
- e. Seibrecht Substation to Redfield Substation located in Redfield, South Dakota - 36.8 miles.
- f. Seibrecht Substation to Aberdeen Industrial Park Substation located in Aberdeen, South Dakota - 5.3 miles.
- g. Redfield Substation to Western Area Power Administration Huron Substation approximately one mile south of Broadland, South Dakota - 30.1 miles.
- h. Western Area Power Administration Broadland Substation to West Park Substation located near the northwest edge of Huron, South Dakota the original circuit - 9.1 miles.
- i. Western Area Power Administration Broadland Substation to West Park Substation second circuit - 10.3 miles.
- j. West Park Substation to Mitchell Substation located in Mitchell, South Dakota - 55 miles.
- k. Mitchell Substation to Northern States Power Company's Grant Substation located west of Sioux Falls - 47 miles. NorthWestern owns 23.3 miles of the line from Mitchell Substation to the Northern States Power Company's interconnection point at the McCook County line.

- l. Mitchell Substation to the Tripp Junction Substation located 5.5 miles south of Tripp, South Dakota - 41.5 miles.
- m. Tripp Junction Substation to Menno Junction Substation located four miles north of Lesterville, South Dakota - 21.8 miles.
- n. Menno Junction Substation to Yankton Junction Substation located four miles Northwest of Yankton, South Dakota - 18.4 miles.

Type 230 KV - AC

Big Stone Plant Substation near Big Stone City, South Dakota to Blair Substation near Gary, South Dakota - 33 miles. NorthWestern owns 16.2 miles of the line from the Big Stone Plant Substation south, with the Otter Tail Power Company owning the remainder of the line to the Blair Substation.

Projected Date of Removal

The projected removal date of these lines is beyond the period covered by this Plan.

20:10:21:07 Proposed Transmission Facilities

NorthWestern proposes two additional transmission at 115 KV during the period covered by this Plan.

Aberdeen Industrial Park - Aberdeen Fairgrounds

1. General anticipated location and reasons for such selection: The line is anticipated to be located on the north and east sides of Aberdeen, load growth in the industrial park area (and in the rest of Aberdeen) requires expansion of the existing 115 kV supply and reinforcement of the existing 34.5 kV subtransmission system.
2. Probable type and proposed transmission voltage: Single pole wish-bone and horizontal post construction -- 115 kV.

3. Description of anticipated associated facilities: Bays for a Circuit Breaker and Bays for Circuit Switchers, and a 115/34.5 kV transformer at the expanded Aberdeen Fairgrounds substation; circuit switcher and disconnects at the Aberdeen Industrial Park Substation.
4. Projected date of removal from service: Beyond the scope of this report.
5. Total estimated capital cost: Line \$1,350,000; associated substation facilities \$1,500,000.

Yankton Junction - Yankton East Plant

1. General anticipated location and reasons for such selection: The line is anticipated to be routed on the east edge of Yankton, load growth in the Yankton area requires expansion of the existing 115 kV supply and reinforcement of the existing 34.5 kV subtransmission system.
2. Probable type and proposed transmission voltage: Single pole wish-bone construction -- 115 kV.
3. Description of anticipated associated facilities: Circuit Breaker and bay at the existing Yankton Junction substation; 115/34.5 kV transformer, fuses and disconnects at the Yankton East Plant Substation.
4. Projected date of removal from service: Beyond the scope of this report.
5. Total estimated capital cost: Line \$1,108,000; associated substation facilities \$2,350,000.

20:10:21:08 Coordination of Plans

NorthWestern coordinates its plans with other utilities serving the region through joint ventures, as described in the Energy Conversion Facilities section, through joint transmission studies and through the MAPP regional models.

20:10:21:09 Single Regional Plans

In the future it is expected that a single regional plan will be developed by the Dakotas-Montana Power Suppliers Group.

20:10:21:11 Submission of Regional Plan

Montana-Dakota Utilities, Northern States Power, Otter Tail Power, Minnkota Power Cooperative, Minnesota Power and Northwestern Public Service formed the Dakotas-Montana Power Suppliers Group in 1979. The objective of the Group is to provide regional planning coordination to the respective State regulatory bodies.

20:10:21:11 Utility Relationships

NorthWestern is a participant in the Mid-Continent Area Power Pool (MAPP). All major transmission and generation planning performed by NorthWestern is coordinated on a regional basis through MAPP.

20:10:21:12 Efforts to Minimize Adverse Effects

NorthWestern complies with all laws and regulation governing Environmental Impact Statements, applications, permits, rules and procedures pertaining to energy conversion facilities and transmission facilities in attempts to identify, minimize or avoid all adverse effects.

20:10:21:13 Efforts Relating to Load Management

NorthWestern's March 95 Integrated Resource Plan reviewed potential load management programs for implementation. Where economically feasible NorthWestern is now marketing commercial and industrial lighting upgrades as a customer service provided by NorthWestern Services.

NorthWestern Services also has an effort to contact our commercial and industrial customers in order to study and analyze their uses of electricity, and to make helpful recommendations wherever possible as to methods and solutions to manage their use of electricity more efficiently. This kind of analysis is designed to help the customer lower his peak demand requirements which will lower the utility bill on a demand rate and also help to lower company peaks, thereby reducing or delaying the need for generation construction.

Another NorthWestern Services program evaluates the economics and can provide a distributed generation solution for any customers served under interruptable rates.

Time of use load research, which was originally required by the Public Utilities Regulatory Act, is being continued. The program provides customer and system usage data now used for forecasting and reactive compensation studies. That data and additional data now being collected is used for the study of additional load management programs. The present focus of studies are our irrigation customers for this summer. This data will be used in conjunction with other data to revise our present irrigation rates.

20:10:21:14 List of Reports

Not applicable.

20:10:21:15 Changes in Status of Facilities

Any changes in status of the energy conversion facilities should be described by the Project Managers in their Ten-year plans.

20:10:21:16 Projected Electric Demand

The projected annual peak demand for our total system, which is entirely in-state, is shown below.

<u>Year</u>	<u>Demand (MW)</u>	<u>Increase (Pct.)</u>	<u>Increase (MW)</u>
2002	295	1.4	4
2003	298	1.0	3
2004	302	1.3	4
2005	306	1.3	4
2006	309	1.0	3
2007	312	1.0	3
2008	316	1.3	4
2009	319	1.3	4
2010	322	1.2	4
2011	326	1.2	4
2012	330	1.2	4

These projections are based upon the March, 1995 Integrated Resource Plan Report adjusted for 1995 actuals. This forecast is based upon an econometric analysis techniques. End-use forecasts were used for comparison purposes.

20:10:21:17 Changes in Electric Energy

The projected energy requirements by volume (MWH) and the percentage increase for each year are shown below.

<u>Year</u>	<u>Annual Energy (MWH)</u>	<u>Increase (Pct.)</u>
2002	1,282,000	1.7
2003	1,307,000	1.9
2004	1,325,000	1.4
2005	1,342,000	1.4
2006	1,361,000	1.2
2007	1,378,000	1.3
2008	1,396,000	1.3
2009	1,415,000	1.4
2010	1,433,000	1.3
2011	1,452,000	1.3
2012	1,471,000	1.3

These projections are based upon the March, 1995 Integrated Resource Plan Report. This forecast is based upon an econometric analysis techniques. End-use forecasts were used for comparison purposes.

20:10:21:18 Map of Service Area

(See attached map)

20:10:21:19 Individual Utility Plans

This Ten-year Plan is submitted by NorthWestern Energy, a division of NorthWestern Corporation. If additional information or clarification is required, contact:

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